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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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MAY 26 1999

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In Matter of	)	
	)	
Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98
	)	
	)	
Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers	)	CC Docket No. 95-185

COMMENTS OF LOW TECH DESIGNS, INC.

Low Tech Designs, Inc. (LTD), by its attorney, respectfully submits these comments in response to the Commission's Second Further Notice of Proposed Rulemaking (Notice) in the captioned proceeding.[1]

INTRODUCTION AND SUMMARY

In determining how to re-define unbundled network elements (UNEs) in the aftermath of the Supreme Court's *Iowa Utilities* decision, the Commission indicates in the Notice that it is seeking to build on industry expertise and technological changes since 1996. The Notice also emphasizes that the Commission will "consider . . . how the unbundling obligations of the Act can best facilitate the rapid and efficient deployment of *all* telecommunications services, including advanced services." Notice ¶ 3 (emphasis in original).

These comments focus on a wide spectrum of advanced telecommunications services that has not benefited from the power of competition in the past three years, specifically those based

[1] *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996,* Second Further Notice of Proposed Rulemaking, CC Docket No. 96-98, FCC 99-70 (rel. March 18, 1999).

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on the "Advanced Intelligent Network" (AIN). AIN is signaling-based network technology, already deployed by all incumbent local exchange carriers (ILECs or incumbent LECs), capable of supporting a broad variety of innovative, competitive and feature-rich end user services. As LTD demonstrates below, AIN functionalities — including the crucial "AIN triggers" — must be made available to all competitive LECs on an unbundled basis under any reasonable interpretation of Section 251 of the Act.

BACKGROUND

As a relatively small new entrant attempting to compete with much larger telecommunications carriers, including ILECs, LTD has accumulated a wealth of direct experience on the importance of and lack of marketplace alternatives for AIN functionalities. Three years after entering the competitive process launched by the 1996 Act, LTD has still not been able "to provide the services that it seeks to offer," 47 U.S.C. § 251(d)(2)(B), due to a combination of regulatory uncertainty and foot-dragging by incumbent LECs.[2] These proposed services are based on the use of the Advanced Intelligent Network database and signaling UNEs, combined with special telephone numbers commonly known as abbreviated dialing arrangements (ADAs).[3] As of this date, we know of no competitive entrants successfully competing against the ILECs in this growing and potentially revolutionary area of telecommunications services.

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[2] Since August of 1996, as a CLEC, and certificated by the Georgia PSC, LTD has attempted to compete with Incumbent LEC's in the provisioning of all local telecommunications services. LTD believes that its proposed services represent an attempt to enter the last area of telecommunications still tightly controlled by the ILECs.

[3] The Commission has repeatedly stated that "abbreviated dialing arrangements are telephone numbers of less than the standard 7 or 10 digits." *See Use of N11 Codes and Other Abbreviated Dialing* Arrangements First Report and Order and Further Notice of Proposed Rulemaking, CC Docket 92-105, ¶ 1 (rel. Feb. 19, 1997). These ADAs are in the form of N11, *XX, *2XX, and *3XX (or alternatively 11XX, 112XX or 113XX).

LTD and other new entrants wish to compete with the ILECs in the software-driven "logical network" or "intelligent telecommunications routing" space, in addition to the physical network world of ports and loops. This "logical" area of telecommunications services is contained within the previously defined Commission realm of "signaling networks and call-related databases UNEs."[4] Significantly, the Commission recently terminated its long standing *Inquiry* on *Intelligent Networks*. In the Order terminating that proceeding, the Commission made clear that its decisions in this and related dockets on unbundling and interconnection would satisfy the needs of competitors for access to ILECs' AIN functionalities.

> [W]e terminate the above-captioned proceeding concerning third-party access to the local exchange carriers' (LECs') intelligent networks. We conclude that most of the issues raised in this proceeding have been addressed by the *Local Competition Order* or are being considered in the *Computer III Further Notice,* which is the Commission's current review of its Open Network Architecture (ONA) and Computer III requirements.[5]

Because this proceeding serves as a fresh look at the *Local Competition Order*, a detailed analysis of third-party and CLEC access to the ILEC AIN facilities and functionalities is appropriate to the unbundling questions raised in the Notice.

I. ILECs CURRENTLY PROVIDE A WIDE VARIETY OF SERVICES BASED ON AIN AND AIN/ADA FACILITIES AND FUNCTIONALITIES

Since the passage of the 1996 Act, ILECs have retained complete control over the provision of AIN and ADA-based telecommunications services because all such services require

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[4] This is entirely consistent with the definition of "network element" (47 U.S.C. § 153(29)) as "a facility or equipment used in the provision of a telecommunications service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, *including subscriber numbers, databases, signaling systems,* and information sufficient for billing and collection or *used in the transmission, **routing, or other provision of a telecommunications service***." (emphasis added)

[5] *Intelligent Networks,* Notice of Inquiry, 6 FCC Rcd 7256, 7256 (1991), and Order, CC Docket No. 91-346, ¶ 1, FCC 98-322 (rel. December 4, 1998).

access to core facilities and capabilities — either AIN features or ADAs — that must be implemented on a central office (CO) wide basis. These advanced services, such as *69 (automatic call return) and *66 (automatic callback), are marketed as pay-per-use services, typically at a rate of 75 cents per activation. These so-called CLASS services use central office software and frequently take advantage of SS7 signaling protocols for their capabilities.

A. SNET's Star *99

This AIN based service, called SNET Star *99, is based on the *99 ADA and offered by Southern New England Telephone Co. (SNET). This free service uses AIN to route billable long distance calls over SNET's own SNET America long distance carrier using the least cost rating method of pricing.

SNET declares that:

> From now on, you don't have to worry about shopping for low out-of-state long-distance rates. Because at SNET we've done all the work for you. With SNET Star *99, you'll automatically get the lowest rates on all your long-distance calls -- even if you only make one or two long-distance calls a month, you can save money. Guaranteed. There are no set-up fees, no monthly fees, no hidden fees, and no risk. Guaranteed.

(*See* Attachment "A" for a copy of the SNET Star *99 product flyer.)

B. Ameritech

1. Voice Mail *98

Ameritech offers an ADA and AIN based service as part of its deregulated voicemail service called "Voice Mail 98." According to Ameritech's Web site <http://www.ameritech.com/products/answer/voicemail.html#98>, "[n]o password is needed when you access your Voice Mail from home. Simply dial *98."

Apparently, this *98 service is not usage sensitive and functions as a shortcut or speed dialing code for the normal 10 digit Ameritech voicemail service number. It is not known if competing providers of voice mail services are allowed to use this capability for their subscribers.

2. Privacy Manager (or Telemarketing Block)

By combining an AIN 0.2 terminating attempt trigger with custom recorded announcements using an AIN Intelligent Peripheral, Ameritech intercepts unknown or unidentified calls with a recording advising telemarketers to hang up and take subscribers off their call list. This example of an AIN 0.2 trigger and custom announcements shows the power of AIN that third parties also wish to offer to subscribers, but have not been able to provide.[6]

C. BellSouth

1. Atlanta Airport Billing Application

BellSouth in Atlanta has long offered a *99 and AIN-based service at Hartsfield International Airport in Atlanta. This service allows airline carriers that share departure and arrival gates to activate and deactivate a shared phone service that uses *99 as a billing change activation code.

2. *XX ADA's Available to Non-Telecommunications Carriers

Even non-telecommunications carriers can implement *XX ADA based services using BellSouth's "AIN Toolkit." As the following excerpt from BellSouth's Georgia General Sub-

[6] Custom announcements allow for interactive call processing applications, a critical element of innovative and consumer friendly applications.

scriber Tariff shows below, the "Feature Code Trigger" is one of the available AIN triggers that may be assigned to a BellSouth subscribers line on a presubscribed basis only.

> A 34.7.1 General - A. BellSouth AIN Toolkit allows subscribers to access call information and AIN processing capabilities to create customized telephone services according to the needs of the subscriber/end user.
>
> Subscribers will create services by using a set of tools (i.e., a Service Creation Environment) that allows them to configure the AIN capabilities. After a service has been created, it is verified by the Service Management System (SMS) for completeness. The verified service is provisioned on the AIN network elements of the Public Switched Telephone Network and may be activated or deactivated at the subscriber's discretion.
>
> A subscriber's created service will require the provisioning of triggers. The triggers available for BellSouth AIN Toolkit service subscribers include the following:
>
> -Terminating Attempt
> -10-digit Public Office Dialing Plan (PODP)
> -Customized Dialing Plan (CDP)
> -Off-hook Delay
> -Off-hook Immediate
> -Feature Code

This presubscribed service capability is not the type of access BellSouth provides for itself using ADA's. *69, *66 and the 511 and 211 pay-per-use ADA's are available for dialing by anyone in the Atlanta area BellSouth network without presubscription.

As the Commission is aware, BellSouth currently offers N11 based ADA's for commercial purposes in many of their state jurisdictions, including Georgia, Florida, Louisiana and Tennessee. In Georgia and Florida, BellSouth Advertising and Publishing Co. (BAPCO) has entered into joint ventures with newspaper companies to offer information services using the 511 code on a pay-per-use basis. These services are heavily advertised in the BellSouth Yellow Pages using full color display ads.

3. BusyConnect and BellSouth Real-time Advertising

BellSouth has also introduced a service known as "BusyConnect." This service utilizes an AIN Release 0.2 trigger, automatically activated on subscriber lines without requiring an end user request. Most ILECs prefer to restrict third parties to access to less powerful AIN 0.1 triggers, requiring individual subscriber presubscription.

BusyConnect replaces the traditional busy signal with an advertising announcement to the calling party, advising them that for 75 cents they can have the call automatically completed by the BellSouth intelligent network. If the calling party accepts the advertised offer, the BellSouth AIN Service Control Point dials *66 for the caller, something the caller could have done on their own after hearing the busy signal, without the prompting of the inline BellSouth advertising.

D. Bell Atlantic

Bell Atlantic offers an innovative work-at-home service based on the *94 ADA in conjunction with AIN. Information from the Bell Atlantic Web site describes this service:

> Here's how Work at Home Billing Service works: To make a business call from home, customers just need to dial *94. When they receive a second dial tone, they dial the number of the party they are calling. It's that easy.
>
> Businesses that use the service select a long-distance company for their employees' calls. Each month, the business receives an itemized list of all business calls their employees make from home.
>
> Work at Home Billing Service costs $4.50 per line monthly. There's a one-time charge to install the service, which ranges from $9 to $17 per line. Normal service order charges apply. Customers can get additional information about Bell Atlantic's Work at Home Billing Service by calling 1-800-884-8817.

> Work at Home Billing Service is one of the first mass market applications that has been developed for Bell Atlantic's Advanced Intelligent Network (AIN). AIN is one of the latest additions to Bell Atlantic's network architecture.

See <http://www.ba.com/nr/1997/May/19970514002.html>.

E. Southwestern Bell

Although not as innovative in its use of ADAs, Southwestern Bell has nevertheless pushed the envelope in AIN issues. For example, the network disclosure below, found at <http://www.swbell.com/News/Regulatory/OldDisclosures/ip_net.html>, clearly reveals a willingness to allow interconnection of third party AIN Intelligent Peripherals (IP) with Internet based TCP/IP communications between the interconnected IP and the Southwestern Bell Integrated Service Control Point (or ISCP). LTD is not currently aware of the identity of any third parties using this type of interconnection or the functions being provided by Southwestern Bell's own use of this type of interconnection.

This interconnection capability allows for public switched network and Internet integration, a much needed function on a going forward basis in the transparent transfer and evolution of traditional switched services over to the Internet.

This interconnection also implies the availability of AIN 0.2 triggers, a type of AIN trigger that most ILECs have refused to offer to third parties wishing to deploy AIN services. It is LTD's understanding that Intelligent Peripherals inherently require the use of AIN 0.2 triggers in order to implement the Send_to_Resource and Return_to_Source functions. LTD has not yet determined what AIN 0.2 triggers Southwestern Bell offers to itself or others.

Southwestern Bell Network Disclosures

SOUTHWESTERN BELL TELEPHONE (SWBT) COMPANY
IP-to-ISCP Interface

Southwestern Bell Telephone Company plans to make available an interface which will allow a third-party service provider to interconnect an Advanced Intelligent Network Intelligent Peripheral (AIN-IP) device to Southwestern Bell Telephone Company's Integrated Service Control Point (ISCP) facilities.

This interface implements the TR-1129+ protocol in compliance with Bellcore specification ISCP-IP Bellcore document number SR-3511 (Issue 1, October 1995, Version 4.0). There are no known implementation restrictions. This interface requires connection from the IP site to the appropriate ISCP connection site (as listed below) using TCP/IP protocols.

IP Locations Availability	ISCP Connection Site	Availability Date
Texas	Austin, TX	2Q 97
Missouri, Kansas Oklahoma, Arkansas	Kansas City, MO	3Q 97

II. UNBUNDLED ACCESS TO AIN AND AIN/ADA FACILITIES AND FUNCTIONALITIES SQUARELY MEETS THE "NECESSARY AND IMPAIR" STANDARD OF SECTION 251 FOR COMMISSION-MANDATED UNEs

As the above examples convincingly demonstrate, ILECs are free to innovate in the provisioning of ADA and AIN based services, yet no comparable examples of third-party competition in the local provision of these telecommunications services exist.[7] LTD and other CLECs hope to change this situation by the introduction of innovative service of their own. Competitive telecommunications providers would like to bring the power of the Internet to traditional telecommunications services. For example, the Internet has introduced new forms of e-commerce services that have leveraged consumer demand in ways that were impossible in the

[7] The use of network intelligence in this manner of course does not imply that AIN and ADA-based services are information services, as the Act's definition of an information service indicates that the use of logical

past. CLECs wish to do the same by the introduction of routing intelligence for the management of telecommunications and combined/converged telecom/Internet services.

LTD believes that innovative services introduced by CLECs will reduce phone charges for vast numbers of consumers. For instance, as one recent press article reported, the creation of intelligent open markets for commodities such as travel services will rapidly "apply to a variety of telecom businesses, [launching] the emergence of a new class of companies that aggregate customer demand segments and force suppliers to aggressively compete for long-term (and even short-term) commitments." *See* "Fixed Price: Going Once . . .", tele.com Magazine, from the May 17, 1999 issue (Attachment B).

Without access to available ADAs,[8] AIN 0.1 and 0.2 triggers and the ability to interconnect its own Intelligent Peripherals or Service Control Points (SCPs), CLECs are not able to offer innovative services to compete against the ILECs and to provide additional choices to telecommunications consumers. Additionally, CLECs offering these type services must have the ability to bill on the ILEC bill, just as ISPs, ILECs and long distance carriers do today.

A. AIN 0.1 and 0.2 Triggers

It is clear from the examples above that AIN 0.2 triggers are implemented by the ILECs when it suits their business plans. AIN 0.2 triggers have been available from switch vendors for

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and computer-based capabilities for the provision of telecommunications services — such as least-cost routing — is fully within the traditional classification of "basic" telecommunications." *See* 47 U.S.C. § 153(20).

[8] LTD has requested the *11 ADA for implementation in ILEC networks. *11 is an available. unassigned telephone number capable of being assigned by ILECs for intranetwork use, without requiring harmonized assignment by the North American Numbering Plan Administrator (NANPA). LTD has either been denied access to its own ADA by ILECs, or has been referred to the NANPA for the *11 assignment, where its request has also been denied.

many years, and are considered to be software upgrades to the original AIN 0.1 triggers.[9] As such, they should be made available as specific UNEs contained within the Advanced Intelligent Network.

All Bellcore (now Telcordia) defined and switch vendor provided AIN 0.1 and 0.2 triggers are "necessary" required for the provisioning of Advanced Intelligent Network services. It is crucial for the full range of AIN triggers to be included as UNEs in any future determinations by the Commission. (Of course, many switch vendors provide specialized triggers that are not defined by Bellcore standards. These triggers should not be excluded from the specific list of AIN trigger UNEs.)

For example, most ILECs refuse to include the Bellcore-defined AIN 0.1 N11 trigger in their interconnection agreements with CLECs, yet the N11 trigger is an required network element for CLECs wishing to implement Commission-approved N11 codes, such as 311 for police non-emergency and 711 for Telephone Relay Services. This implies that these services can only be offered by ILECs on their networks, a proposition the Commission has rejected.[10] In fact, the trial 311 service provided in Baltimore was created and deployed by AT&T mostly on a Bell Atlantic network. Other AIN 0.1 triggers withheld from competitors, in addition to all AIN

[9] Software upgrades are considered part of network equipment and are thus subject to ILEC unbundling obligations. *See* 47 U.S.C. § 153(45) ("The term 'telecommunications equipment" means equipment, other than customer premises equipment, used by a carrier to provide telecommunications services, and includes software integral to such equipment *(including upgrades)".)*(emphasis added).

[10] Apparently the Commission believes this is unacceptable. In the *Local Competition Order*, the Commission stated that "a carrier offering services solely by recombining unbundled elements can offer services that differ from those offered by an incumbent. For example, some incumbent LECs have capabilities within their networks, such as the ability to offer Centrex, which they do not use to offer services to consumers. Carriers purchasing access to unbundled elements can offer such services." *Local Competition Order,* ¶ 202.This implies that other capabilities, such as AIN triggers, available but not used by the incumbent, should be made available to new entrants in order to allow for innovation from other sources.

0.2 triggers, include the Automatic Flexible Routing trigger (also known as the Automatic Route Selection trigger), Shared Interoffice Trunk trigger and the Private EAMF Trunk trigger.

A partial list of AIN 0.2 triggers include the N11, Automatic Flexible Routing, Public Feature Code, Specific Feature Code, Originate Called Party Busy, Originate No Answer, Terminate Busy, Terminate No Answer, Off-Hook Delay, Off-Hook Immediate, Origination Attempt Authorized, and Specific Digit String.

B. Abbreviated Dialing Arrangements

Without access to the equivalent telephone numbering resources that ILECs make available to themselves but withhold from others, CLECs are not able to offer the innovative services they wish to offer.[11] The *66 and *69 ADAs have been implemented by the ILECs on a non-presubscribed, pay-per-use basis. Additionally, BellSouth implements their commercial N11 ADAs in the same manner, without requiring presubscription.

LTD and MCI WorldCom attempted to work with the industry and vendors in the FCC mandated NANC investigation into how rapidly ADAs could be deployed.[12] Unfortunately, the record in this proceeding shows how the industry and switch vendors never took the FCC seriously and have consistently blocked, up to this day, the implementation of ADAs for CLECs and enhanced service providers.

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[11] LTD wants to make its requested *11 ADA available for use mainly by residential and small business users, telecommunications users most passed over by competition in the local exchange.

[12] See *The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, First Report and Order, CC Docket No. 92-105, ¶ 97 (rel. February 19, 1997), ordering that "the North American Numbering Council will explore how rapidly abbreviated dialing arrangements could be deployed and report back to the Commission on this issue." The NANC Majority in essence reported to the Commission that there was no demand for a nationwide assignment of these telephone numbering resources. In its Comments and Reply Comments on the NANC Report, LTD and MCI WorldCom refuted this and other misguided claims made by the obstructionist majority participants.

C. The "Necessary and Impair" Standard

An objective review of marketplace realities demonstrates that the failure by the ILECs to provide AIN 0.1 and 0.2 triggers and abbreviated dialing arrangements UNEs has completely "impaired" LTD's and other CLECs' ability to provide the competitive services that they seek to offer. If the Commission concludes that any of these UNEs are proprietary, then access to these UNEs is clearly "necessary" for CLECs to compete in the same manner the ILECs provide *66, *69 and N11 abbreviated dialing arrangements for themselves — namely on a non-presubscribed basis. Simply put, it is impossible for CLECs to obtain the abbreviated dialing arrangement UNEs and AIN triggers from any other source. Only the ILECs control these UNEs in their networks, and they cannot be obtained by CLECs by any other means.

Unlike other network elements (for instance, switching), there is no available marketplace mechanism for self-supply of these facilities and functionalities that are ubiquitously deployed in ILEC COs. Consequently, under whatever unbundling requirements the Commission may adopt in the wake of *Iowa Utilities*, AIN triggers and ADAs should plainly be required to be made available to all ILEC competitors on a nondiscriminatory basis.

D. Current UNE Policies That Could be Sunsetted

Current Commission policy restricts interconnecting CLECs from providing their own AIN Service Control Points (SCPs), and does not even consider the possibility of competitors interconnecting their own AIN Intelligent Peripherals (IPs).[13] Both of these policies severely re-

[13] Several state commissions, including Georgia and Illinois, have provided for third-party SCP interconnection in arbitration agreements. As shown above, Southwestern Bell has provided for AIN Intelligent Peripheral (IP) interconnection, and Ameritech has provided their own IP for use with their Privacy Manager product. Both of these interconnection types should be mandated by the Commission to allow for self provisioning of database, signaling and custom announcement UNEs.

stricts competitors, and establish a continued reliance on the incumbent LECs' overpriced AIN infrastructure. This includes the critical starting point of the AIN Service Creation Environment and Service Management Systems.

If the Commission wishes to sunset the required unbundled access to incumbent LEC AIN facilities, it would be well-advised to mandate the interconnection of competitors' AIN SCPs and IPs. This would accelerate innovation in the provisioning of AIN services and provide for the rapid introduction of the logical network convergence "glue" that is necessary for the continued migration to an advanced telecommunications services environment. While this proceeding did not specifically address mandated interconnection requirements, it stands to reason that competitors must be permitted to interconnect their own network elements that fall outside of the "necessary" and "impair" standard, or those UNEs the Commission decides could be "sunsetted." In fact, where interconnection is denied by an ILEC, then the ILECs' own SCPs, IPs, and related AIN facilities are clearly within the Section 251 "necessary and impair" criteria for mandatory unbundling.

CONCLUSION

ILECs routinely offer advanced telecommunications services to their end users, on a non-presubscribed basis, using AIN functionalities and ADAs that are not made available to competitors. As a result, innovation in the development of AIN-based advanced telecommunications services has been stifled. The Commission should therefore (1) require that all AIN 0.1 and 0.2 triggers (and future AIN trigger upgrades) must be made available to competitors on an unbundled basis; (2) mandate the interconnection of CLEC-provided and other third-party AIN/SS7 Service Control Points and Intelligent Peripherals; and (3) complete its deliberations in

CC Docket No. 92-105 to require that all CLECs, in addition to ILECs, have access to ADAs (such as *XX dialing) for the provision of telecommunications services.

Respectfully submitted,

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Dated: May 26, 1999

ATTACHMENT A

Introducing SNET Star*99℠

A free SNET All Distance℠ feature that can save you money.

From now on, you don't have to worry about shopping for low out-of-state long-distance rates. Because at SNET we've done all the work for you. With SNET Star*99, you'll automatically get the lowest rates on all your long-distance calls—even if you only make one or two long-distance calls a month you can save money. Guaranteed.

There are no set-up fees, no monthly fees, no hidden fees, and no risk. Guaranteed.

LOWER RATES THAN AT&T, MCI AND SPRINT

SNET Star*99 makes it easy to save money every time you make a direct-dial call to someone outside of Connecticut. SNET will automatically give you the lowest basic direct-dial long-distance rate offered by AT&T, MCI or Sprint at the time you call. Plus, we'll give you an additional discount of 5% off that low rate. Guaranteed.

The SNET Star*99 discount applies any time of the day, 7 days a week. You can call anywhere in the United States, including Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands.

GET AN ADDED 10% BONUS

In addition to the 5% discount, you'll get a 10% bonus, in the form of a credit, every single year! Your 10% credit is based on your total annual usage of SNET Star*99.

To get a 10% credit on your January 1996 SNET phone bill just become an SNET Star*99 customer now and use it through December 31, 1995. Imagine starting each new year with a credit on your January SNET phone bill!

START SAVING MONEY TODAY

SNET Star*99 is so easy, you don't even have to switch your long-distance carrier or make any changes whatsoever to your current phone service. No matter which long-distance carrier you have, you can use SNET Star*99.

Just call us today at **1-800-585-7638** and ask for your SNET Star*99 service. Or complete the attached reply card and drop it in the mail. It's really that easy.

Printed in USA 7/95

ATTACHMENT B

FIXED PRICE: GOING ONCE ...

by David Ticoll

Is fixed pricing on its way out? We're starting to see signs that this might be happening in both business and retail transactions, even in markets where fixed price has never been entirely dominant. Consider these online businesses:

• Priceline lets consumers "name their price" for air travel, hotel rooms, cars and mortgages. In exchange for these deals, buyers give up specific control over choice of supplier (which airline, for example) and other conditions of the deal (they can pick the date of travel, say, but not the number of stops).

• Onsale has a healthy auction business in overstocked and slightly obsolete electronics and other products. Many of these products were traditionally sold at discount; now they've shifted to a more lucrative auction model.

• Bill Hambrecht—lately of the investment firm Hambrecht & Quist, which he founded—is launching a new business. It will use a Dutch auction format (which begins at a "high" price and moves downward) to price and allocate shares of initial public offerings (IPOs). Hambrecht's approach takes pricing power away from investment banks and will be a lot cheaper for issuing companies. And anyone will be able to vie for access to new issues, not just the underwriters' favorite clients.

• A new startup called FreeMarkets is challenging the way businesses conduct competitive procurement. The traditional "sealed bid" approach gives vendors a modicum of price protection, but FreeMarkets has developed a new process for setting up and running real-time bidder auctions. Buyers like Caterpillar and Siemens claim to have saved 20 percent or more over the old way of doing things.

These new "open market" models are certainly in the interest of customers, who gain in choice and often in price. But, surprisingly, they often benefit sellers as well. Onsale's suppliers are getting rid of more stuff—faster and for better prices. Hambrecht's issuers will save on road shows (which will be done over the Net) and will likely get prices much closer to the skyrocketing first-day values now enjoyed by "flippers."

Why is this happening? Open markets prevail where the "transaction costs" associated with real-time price negotiation are lower than the variable range of price uncertainty. It's not worth a consumer's while to negotiate the price of a bottle of milk every time she goes to the supermarket. But if she could force several supermarkets to compete over discounts in exchange for her long-term business, it might be worth it. The Internet makes such things possible: It reduces the costs associated with time, distance and demand aggregation that have restricted mass-market price negotiation.

Believe it or not, "open markets" can benefit the sellers as much as they do the customers.

All this will apply to a variety of telecom businesses. We will see the emergence of a new class of companies that aggregate customer demand segments and force suppliers to aggressively compete for long-term (and even short-term) commitments.

Price discovery mechanisms, which subtly define the advantages and disadvantages of various players, are also going through a period of change. Priceline has even convinced the U.S. government that its price discovery model is worthy of a patent. The Securities and Exchange Commission has accelerated its battles with NASDAQ, the American Stock Exchange and others in order to level the price discovery playing field in the securities industry.

Telecom companies need to prepare for the opening up of this new frontier and identify the opportunities and threats that it represents. It might be a good idea to talk to some of your folks who learned the auction game at the feet of the Federal Communications Commission about how to apply their knowledge to the emerging price discovery markets for telecom companies and their customers.

DAVID TICOLL *is managing director and CEO of the Alliance for Converging Technologies (Toronto), a research and consulting firm that specializes in innovative business strategies for the digital economy. He can be reached at dticoll@actnet.com.*

CERTIFICATE OF SERVICE

I, Bobbette T. Findley, do hereby certify that on this 26th day of May, 1999, that I have served a copy of the foregoing document to the following:

Bobbette T. Findley

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Federal Communications Commission
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